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Amendments to the Specification

Please replace paragraph [0036] with the following amended paragraph:

[0036] Operation within MODE 1 is initially presumed at time t_0. Within MODE 1, motor torque is controlled with the objective of establishing input member speed Ni to a desired input member speed Ni_des. Direct coupling of the engine and the input member make the engine speed equivalent to the input member speed and Ni_des is equivalent to a desired engine speed. Desired engine speed is provided by the system controller, for example in accordance with a desired operating point of the engine to meet various efficiency and emission objectives. A preferred method of determining input speed is disclosed in commonly assigned and co-pending United States Serial ~~Numbers~~ Number 10/686,508 filed October 14, 2003 and United States Serial Number 10/686,034 (now USPN 6,957,137) filed October 14, 2003 which are incorporated herein by reference. Control of the input member speed to a desired speed, Ni_des, may be performed in accordance with a preferred input speed controller described in commonly assigned and co-pending United States Serial Number 10/686,511 filed October 14, 2003 which is incorporated herein by reference.

Please replace paragraph [0037] with the following amended paragraph:

[0037] Generally, the various motor torque controls in the present invention follows the general form matrix equation taught in co-pending United States Serial Number 10/686,511 filed October 14, 2003 and shown below as follows:

$$[Ta\ Tb]T = [B1] * [Ti\ \ To\ \ Ni\_dot\ \ No\_dot]T + [k1\ \ k2]T * u$$

where

Ta is externally applied motor A torque;

Tb is externally applied motor B torque;

Ti is externally applied input member torque;

To is externally applied output member torque;

Ni_dot is input member acceleration;

No_dot is output member acceleration;

B1 is a matrix of parametric values determined by the hardware gear and shaft interconnections and estimated hardware inertias applicable to the current mode;

k1 and k2 formulate a vector gain matrix for modifications of Ta and Tb; and,

u is the desired closed loop control effort.

Other different independent member accelerations may be substituted for those shown above to arrive at similar matrix equations. Ni_dot and No_dot are selected as expedient since both input and output speed are quantities of general interest in other areas of the transmission and vehicle controls.

Please replace paragraph [0052] with the following amended paragraph:

[0052] To complete the upshift, the fixed-ratio operation must be exited and entry into the MODE 2 effected by the transfer of torque being carried by clutch C1 to the motors. Again, with the objective of producing minimal driveline torque disturbances during such transfer, control of the clutch C1 slip speed to zero is critical. At time t5 a decision is made to exit fixed-ratio operation and complete the upshift. This decision may primarily be based upon the general objective of preventing shift cycling conditions wherein exit from fixed-ratio operation is followed quickly by re-entry into fixed ratio operation. One manner of providing a decision of an appropriate exit from fixed-ratio operation is disclosed in commonly assigned and co-pending United States Serial Number 10/686,176 filed October 14, 2003 which is incorporated herein by reference. In accordance with the teaching therein, exit is controlled based upon shift confidence factors determined in accordance with proportional and derivative input speed error quantities.